

Please amend the claims 1-13 to read as follows:

1. A fluid flow control system for an electromagnetic pump, the control system comprising:

an electromagnetic drive means within a compressor, wherein the control system supplies a pulse width modulated drive signal to the electromagnetic drive means so as to provide a predetermined pump flow rate, and wherein the drive signal is generated by a dc voltage supply.
2. The fluid flow control system of claim 1, wherein the pulse width modulated drive signal comprises variable mark space ratio pulses with defined repetition rates and amplitude.
3. The fluid flow control system of claim 1, wherein the electromagnetic drive means includes at least one stator of magnetic material, at least one excitation winding for magnetically exciting the at least one stator, and a movable magnetic member connected to an actuator of the compressor.
4. The fluid flow control system of claim 1, further comprising as least one diaphragm, wherein the electromagnetic drive means is operatively associated with the at least one diaphragm to provide conversion of electrical energy to fluid flow.

5. The fluid flow control system claim 1, further comprising excitation windings having instantaneous current, and wherein the pulse width modulated drive signal controls the instantaneous current within the excitation windings.

6. The fluid flow control system of claim 1, wherein the drive signal includes a mark-space ratio, and wherein the mark-space ratio of the drive signal defines over time an approximate half sine wave current waveform.

7. The fluid flow control system of claim 1, wherein the pulse width modulated drive signal is of substantially constant amplitude.

8. A fluid flow control system for an electromagnetic pump, the control system comprising;

an electromagnetic drive means within a compressor, wherein the control system supplies a pulse width modulated low voltage drive signal of substantially fixed amplitude to the electromagnetic drive means, wherein the electromagnetic drive means includes coils having current, and wherein the pulse width modulated low voltage drive signal controls amplitude and repetition rate of the current in the coils of the electromagnetic drive means to drive an actuator of the compressor in order to generate a desired flow rate output from the compressor.

9. A fluid flow control system for an electromagnetic pump, the control system comprising;

an electromagnetic drive means within a compressor, wherein the control system further comprises:

a command generator that creates a command signal corresponding to a predetermined desired fluid flow rate;

at least one sensor to ascertain the status of the system and provide at least one feedback signal,

wherein the command signal and the at least one feedback are processed by a command processor, wherein the command processor outputs a drive signal defined by a mark-space ratio, a repetition rate, and an amplitude, and wherein the drive signal controls voltage applied to compressor windings.

10. The fluid flow control system of claim 1, wherein the at least one sensor provides feedback to the command processor regarding instantaneous coil current.

11. The fluid flow control system of claim 1, wherein the at least one sensor provides feedback to the command processor regarding actuator displacement.

12. The fluid flow control system of claim 1, wherein the at least one sensor provides feedback to the command processor regarding bladder system pressure.

13. The fluid flow control system of claim 1, wherein the at least one sensor provides feedback to the command processor regarding bladder system fluid flow.

[illegible]

1. (Amended) A fluid flow control system for an electromagnetic pump, the control system comprising:

an electromagnetic drive means within a compressor, wherein the control system [supplying] supplies a pulse width modulated drive signal to the electromagnetic drive means so as to [supply] provide a predetermined pump flow rate, and wherein the drive signal is generated [from] by a dc voltage supply.

2. (Amended) The [A] fluid flow control system [as claimed in] of claim 1, wherein the pulse width modulated drive signal comprises [a train of] variable mark space ratio pulses with defined repetition rates and amplitude.

3. (Amended) The [A] fluid flow control system [as claimed in of claims 1 or 2] of claim 1, wherein the electromagnetic drive means includes at least one stator[(s)] of magnetic material, at least one excitation winding[(s)] for magnetically exciting the at least one stator[(s)], and a movable magnetic member connected to [the] an actuator of the compressor.

4. (Amended) The [A] fluid flow control system [as claimed in] of claim 1 [3], further comprising at least one diaphragm, wherein the electromagnetic drive means [in combination with diaphragms] is operatively associated with the at least one diaphragm to provide [provides a] conversion of electrical energy to fluid flow.

5. (Amended) The [A] fluid flow control system [as claimed in any preceding claim 1, further comprising excitation windings having instantaneous current, and wherein the pulse width modulated drive signal controls the instantaneous current within the excitation windings.

6. (Amended) The [A] fluid flow control system [as claimed in] of claim 1 [5], wherein the drive signal includes a mark-space ratio, and wherein the mark-space ratio of the drive signal defines [with] over time an approximate half sine wave current waveform.

7. (Amended) The [A] fluid flow control system [as claimed in] of claim 1 [6], wherein the pulse width modulated drive signal is of substantially constant amplitude.

8. (Amended) A fluid flow control system for an electromagnetic pump, the control system comprising:

an electromagnetic drive means within a compressor, wherein the control system [supplying] supplies a pulse width modulated low voltage drive signal of substantially fixed amplitude to the electromagnetic drive means, wherein the electromagnetic drive means includes coils having current, and wherein the pulse width modulated low voltage drive signal [to control the] controls amplitude and repetition rate of the current in the coils of the electromagnetic drive means to drive [the] an actuator of the compressor in order to generate a desired flow rate output from the compressor.

10. (Amended) A fluid flow control system for an electromagnetic pump, the control system comprising:

an electromagnetic drive means within a compressor, wherein the control system further comprises: [including]

a command generator that creates [creating] a command signal corresponding to a predetermined desired fluid flow rate;[,]

at least one sensor[(s)] to [sense] ascertain the status of the system and provide at least one feedback signal[(s)],

wherein the command signal and the at least one feedback [signal(s) being] are processed by a command processor, wherein the command processor [providing] outputs a drive signal [output, the drive signal] defined by a mark-space ratio, a repetition rate, and an amplitude, and wherein the drive signal controls [controlling the] voltage [to be] applied to [the] compressor windings.

10. (Amended) The [A] fluid flow control system [as claimed in] of claim 1 [9], wherein the at least one sensor[(s)] provides feedback to the command processor regarding [of] instantaneous coil current.

11. (Amended) The [A] fluid flow control system [as claimed in] of claim 1 [9], wherein the at least one sensor[(s)] provides feedback to the command processor regarding [of] actuator displacement.

12. (Amended) The [A] fluid flow control system [as claimed in] of claim 1 [9], wherein the at least one sensor[(s)] provides feedback to the command processor regarding [of] bladder system pressure.

13. (Amended) The [A] fluid flow control system [as claimed in] of claim 1 [9], wherein the at least one sensor[(s)] provides feedback to the command processor regarding [of] bladder system fluid flow [into/out of bladder system].